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Transmitted via Email

October 7, 2021

Ms. Lisa Denmark
Remedial Project Manager
U.S. Environmental Protection Agency
Hazardous Site Cleanup Division, 3HS23
1650 Arch Street
Philadelphia, PA 19103

**RE: QUARTERLY PROGRESS REPORT FOR THE AVTEX FIBERS SUPERFUND SITE FOR THE
PERIOD JULY 1 THROUGH SEPTEMBER 30, 2021 (THIRD QUARTER)**

Dear Ms. Denmark,

This quarterly progress report addresses the reporting requirements detailed in the 1999 Consent Decree between the United States of America and FMC Corporation to conduct removal and remedial actions. Pursuant to the Consent Decree and in accordance with Section XI, Paragraph 45, FMC has prepared this progress report to describe actions taken during the third quarter of 2021.

If you have any questions or comments, please call me at 215-299-6047.

Sincerely,

Brian McGinnis
Senior Remediation Manager

Enclosure (1)

cc: A. Geyer, USEPA
C. Marquette, VADEQ
H. Philip, Parsons
M. Robinson, Parsons
M. Straub, Parsons
A. Burnham, Parsons



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1.0 INTRODUCTION

FMC Corporation (FMC) has conducted removal and remedial activities at the Avtex Fibers Superfund Site, Front Royal, Virginia (Site). The removal action, remedial design, and remedial action activities were performed pursuant to the 1999 Consent Decree between the United States of America and FMC (effective October 21, 1999).

Upon completion of the Groundwater Leachate Treatment Plant (GLTP) in 2014 following Site remediation activities, the Site transitioned into the Operations and Maintenance (O&M) phase. This report documents the O&M and monitoring activities and findings for the third quarter of 2021, reporting period July 1 through September 30. Daily operations and maintenance activities are ongoing and meet the requirements in the *Sitewide O&M Plan* (FMC, May 2015).

In accordance with Section XI of the Consent Decree, this quarterly progress report contains the following:

- Description of actions taken, reports prepared, and a summary of data generated by FMC during the third quarter (July, August, and September 2021).
- Description of the problems encountered this quarter and actions taken to mitigate these problems.
- Actions scheduled for the next quarter (October, November, and December 2021).
- Update on the schedule of actions and percent completion of tasks.
- Modification to work plans or other schedules.

No activities were undertaken in support of the U.S. Environmental Protection Agency (USEPA) Community Relations Plan. Any future actions will be documented in the relevant quarterly progress report.

Attachment 1 lists correspondence and deliverables transmitted from FMC or FMC contractors to USEPA and the Virginia Department of Environmental Quality (VADEQ), and from USEPA, USEPA contractors or VADEQ to FMC during the third quarter of 2021.

2.0 OU-7, OU-10, AND NON-TIME CRITICAL REMOVAL AND REMEDIAL ACTIONS

2.1 ACTIONS TAKEN AND REPORTS PREPARED (THIRD QUARTER 2021)

- Completed quarterly inspection as described in Section 6 of Part 1 of the *Sitewide O&M Plan*. The results are presented in **Attachment 2**.
- Quarterly monitoring of gas vents was completed as described in Section 3.0 of Part 1 of the *Sitewide O&M Plan* (May 2015) and as amended by the February 28, 2018, letter from USEPA with the subject "Proposed Modification to the Passive Gas Vent and Gas Vent Filter System Inspection, Monitoring and Maintenance Section of the Sitewide Post-Closure Care Operations and Maintenance Plan."

- Quarterly post-closure OU-7 and Site perimeter real-time air monitoring was completed as required by Section 2.2 of the *Air Monitoring Plan Operable Unit 7, Avtex Fibers Superfund Site, Front Royal, Virginia* (October 2011). The results are presented in **Attachment 3**.
- Submitted response to EPA's August 17, 2021, comments on the *Annual Groundwater, Surface Water, and Sediment Report* (June 2021). A revised document was submitted on September 7, 2021.
- Completed the annual groundwater monitoring event (July 2021).
- Collected the annual leachate samples (July 2021).
- Collected annual river surface water and sediment samples (July 2021).
- Collected annual sump samples (July 2021).
- Collected annual air samples (July 2021)
- Initiated the annual wetland survey and triennial biota sampling activities September 2021.

2.2 DATA GENERATED (THIRD QUARTER 2021)

As required by the *Air Monitoring Plan* (2011), post-construction quarterly air monitoring for hydrogen sulfide and organic vapors was completed in September 2021. The results of the quarterly air monitoring are provided in **Attachment 3**. Results from the annual air sampling event have been received and the data are being validated. The validated data will be included in the next quarterly report.

The quarterly air monitoring results indicated:

- Hydrogen sulfide was not detected at any monitoring locations. The OU-7 and Site perimeter indicator values were 0.006 parts per million (ppm) and 0.0014 ppm, respectively.
- No volatile organic compounds (VOCs) were detected at any of the monitoring locations.

The following instruments were utilized to collect the real-time readings:

- Hydrogen sulfide: Jerome 613X
- Organic vapor: MiniRAE 3000

2.3 PROBLEMS ENCOUNTERED AND REMEDIES (THIRD QUARTER 2021)

No problems were encountered during the reporting period.

2.4 ACTIONS TO BE COMPLETED NEXT PERIOD (FOURTH QUARTER 2021)

- Complete quarterly inspection as described in Section 6 of Part 1 of the *Sitewide O&M Plan*.
- Complete quarterly monitoring of gas vents as described in Section 3.0 of Part 1 of the *Sitewide O&M Plan* (May 2015) and as amended by the February 28, 2018, letter, from USEPA with the subject "Proposed Modification to the Passive Gas Vent and Gas Vent Filter System Inspection, Monitoring and Maintenance Section of the Sitewide Post-Closure Care Operations and Maintenance Plan."

- Complete quarterly post-closure OU-7 and Site perimeter real-time air monitoring as required by Section 2.2 of the *Air Monitoring Plan Operable Unit 7, Avtex Fibers Superfund Site, Front Royal, Virginia* (October 2011).
- Conduct the quarterly stormwater inspection.
- Continue the annual wetland survey and triennial aquatic biota sampling.

3.0 GROUNDWATER AND LEACHATE TREATMENT PLANT (GLTP)

3.1 ACTIONS TAKEN AND REPORTS PREPARED (THIRD QUARTER 2021)

The GLTP operated and discharged to the South Fork Shenandoah River for 92 days, from July 1 to September 30, 2021.

Discharge monitoring was completed as required by the July 24, 2014, VADEQ Final Fact Sheet and Applicable or Relevant and Appropriate Requirements (ARARs) for the discharge of effluent from the GLTP. Monthly discharge monitoring included: flow, pH, five-day biological oxygen demand (BOD₅), total suspended solids (TSS), and carbon disulfide (CS₂). The daily maximum and monthly average flow and constituents of concern data are listed in the Discharge Monitoring Reports (DMRs), which were submitted during the third quarter of 2021 and are summarized in Table 1.

Table 1. Summary of 3Q2021 Monthly Effluent Sampling

Parameter	Units	Permit Limits	July 2021		August 2021		September 2021	
			<i>monthly avg</i>	<i>daily max</i>	<i>monthly avg</i>	<i>daily max</i>	<i>monthly avg</i>	<i>daily max</i>
Flow	MGD	0.396	0.062	0.077	0.003	0.016	0.061	0.091
pH	S.U.	6.5 – 9.0*	7.62 – 8.02		7.50 – 8.02		7.55 – 8.03	
BOD ₅	mg/L	24 / 64**	1.20	3.00	0.75	3.00	<QL	<QL
TSS	mg/L	40 / 130**	<QL	<QL	<QL	<QL	2.23	8.90
CS ₂	µg/L	0.1 mg/L***	<QL	<QL	<QL	<QL	<QL	<QL
<p>Where parameters were non-detect, the value '0' was used for calculating average and maximum concentrations. * = Permit limit range for pH as specified in the ARARs. ** = These values represent monthly average and daily maximum permit limits, respectively. *** = There is no established permit limit for CS₂. The value is a monthly action level specified in ARAR. MGD = million gallons per day S.U. = standard units mg/L = milligrams per liter µg/L = micrograms per liter <QL = reported less than the quantitation limit</p>								

Discharge flow and pH were monitored continuously during discharge. The pH monitoring results for each month of the reporting period were included with the monthly DMRs. The effluent pH was within the range of 6.5 to 9.0, as specified in the ARARs.



BOD₅ was monitored weekly. The permitted monthly and daily average limits for BOD₅ of 24 mg/L and the permitted monthly maximum daily limit of 64 mg/L were not exceeded during the reporting period.

TSS was also monitored weekly. The permitted monthly daily average limit for TSS of 40 mg/L and the permitted monthly maximum daily limit of 130 mg/L were not exceeded during the reporting period.

Carbon disulfide was monitored monthly. The results for the monthly samples collected in the third quarter of 2021 were less than the 0.1 mg/L monthly action level specified in the ARARs.

3.2 DATA GENERATED (THIRD QUARTER 2021)

Flow totals for the lift stations, test wells, and viscose basin are contained in **Attachment 4** (Table 4.1). Discharge Monitoring Reports were submitted to the VADEQ and USEPA by the tenth of each month.

3.3 PROBLEMS ENCOUNTERED AND REMEDIES (THIRD QUARTER 2021)

- Replaced gas vent sample ports (1, 2, 3 6, 7, 9, and 10).
- Re-labeled all sulfate basin vents.
- Completed the annual fire suppression sprinkler system inspection in July. The five-year inspection was completed in August 2021, and a broken sprinkler pipe was identified.
- Repaired the broken sprinkler pipe identified during inspection of the fire suppression system jockey pump.
- Leak identified in sprinkler pipe in multiple locations due to oxygen corrosion. Leaks will be repaired, and the nitrogen generator will be inspected to determine if potential repair or replacement is necessary to prevent future corrosion.
- Removed obstruction in sanitary sewer line.
- Faulty air handling unit transformer replaced.
- Damaged vent turbine was noted at gas vent OU-10 GV-6 and will be replaced when parts are received.
- Sample ports at the following gas vents were noted as damaged and will be replaced: SB-1 (GV-6 and GV-28); SB-3 (GV-9); SB-4 (GV-1, GV-11, GV-13, GV-17, and GV-20); and OU-10 (GV-11).

3.4 ACTIONS TO BE TAKEN NEXT PERIOD (FOURTH QUARTER 2021)

- Continue operations and maintenance of the GLTP.
- Continue to collect GLTP system discharge samples as required by the July 24, 2014, VADEQ Final Fact Sheet and ARARs for the discharge of effluent from the GLTP.
- Collect quarterly depth to water measurements.

4.0 OTHER SITE RELATED DOCUMENTS AND ITEMS

4.1 ACTIONS TAKEN AND REPORTS PREPARED (THIRD QUARTER 2021)

Quarterly inspections of seep areas, river berms and gas vents were conducted, and inspection reports were completed.

Rainfall data are presented in Table 4.2 (**Attachment 4**), which summarizes the total precipitation through the end of third quarter 2021. A total of 1.7 inches of precipitation fell on the Site during the reporting period; this is approximately 35 percent of the average Site total yearly precipitation of 39.6 inches.

4.2 ACTIONS TO BE TAKEN NEXT PERIOD (FOURTH QUARTER 2021)

Quarterly inspections of seep areas, river berms and gas vents will be conducted, and inspection reports will be completed.

ATTACHMENTS

- 1 Summary of the Quarterly Correspondence
- 2 Sitewide Quarterly Inspection Reports (with repairs photo log)
- 3 OU-7 and Site Perimeter Air Monitoring Results
- 4 GLTP Discharge Monitoring and Information
 - a. Table 4.1 – Monthly Flow Totals Avtex Site Lift Stations, Test Wells and Viscose Basin
 - b. Table 4.2 - Site Rainfall Data

ATTACHMENT 1

SUMMARY OF QUARTERLY CORRESPONDENCE

ATTACHMENT 1

LIST OF CORRESPONDENCE AND DELIVERABLES FOR THE QUARTER JULY 1, 2021, TO SEPTEMBER 30, 2021, AVTEX FIBERS SUPERFUND SITE, FRONT ROYAL, VIRGINIA

FMC to VADEQ

- July 13, 2021: *June DMR - Avtex Fibers Site, Front Royal, VA* - June 2021 Discharge Monitoring Report Submission (submitted to VADEQ and EPA)
- August 9, 2021: *July DMR - Avtex Fibers Site, Front Royal, VA* - July 2021 Discharge Monitoring Report Submission (submitted to VADEQ and EPA)
- September 3, 2021: *August DMR - Avtex Fibers Site, Front Royal, VA* – august 2021 Discharge Monitoring Report (submitted to VADEQ and EPA)

FMC to EPA

- August 20, 2021: *Site Wide QAPP Update for the Avtex Fibers Superfund Site in Front Royal, Virginia*
- September 7, 2021: *2020 Annual GW, SW, and Sediment Sampling for the Avtex Fibers Superfund Site in Front Royal, Virginia* – Response to Report Comments (submitted to EPA and VADEQ)
- September 16, 2021: *Recovery Well TW-03 Shut Down Request Avtex Fibers Superfund Site, Front Royal, Virginia*

VADEQ to FMC

- July 8, 2021: *June DMR - Avtex Fibers Site, Front Royal, VA* – June Discharge Monitoring Report received (sent to FMC and EPA)
- August 9, 2021: *July DMR - Avtex Fibers Site, Front Royal, VA* – July DMR received (sent to FMC and EPA)

EPA to FMC

- August 17, 2021: *2020 Annual GW, SW, and Sediment Sampling for the Avtex Fibers Superfund Site in Front Royal, Virginia* – Report Comments (submitted to FMC and VADEQ)
- September 21, 2021: *2020 Annual GW, SW, and Sediment Sampling for the Avtex Fibers Superfund Site in Front Royal, Virginia* – Response to Report Comments Received
- September 21, 2021: *2020 Annual Site-Wide Operations and Maintenance (O&M) Report for the Avtex Fibers Superfund Site in Front Royal, Virginia* – EPA concurs with Appendix H Revisions

ATTACHMENT 2

SITEWIDE QUARTERLY INSPECTION REPORTS

Quarterly Inspection Report

Inspected by: M. Harder

Report No.: 2021-09

Date: 09-21-2021

Areas Inspected: See Map

Questions	Response		Comments and Recommendations
1. Remediation/Restoration Areas			
Is settlement or standing water evident? If Yes, describe the degree of settlement(s) (slight, moderate, significant), record approximate dimensions, and indicate the location(s) on an attached map.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	All former areas of standing water were dry or have been repaired (roadway to LS-1, around LS-2, east of the NLF, and around wells 103/203/303).
Is erosion evident? If Yes, describe the type of erosion (rills, gullies), record approximate dimensions (length, width, depth) and indicate location(s) on an attached map.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Are potential leachate seeps evident or migration of contamination? If Yes, describe the nature (size, color, flow rate), record location on an attached map, and photograph. [Note: Check former seep areas in unnamed tributary north of VB 4-6, check pond area north of VB 9, and check other likely areas (e.g., embankments of VBs, SBs)]	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	See map for locations. Potential seeps: -SE of VB-2&3 (Dry) -NW of VB-7&8 (Dry)
Do landfill/basin embankments show signs of erosion, failure (e.g., cracking, sloughing) or migration of contamination (e.g., seeps, exposed waste)? If Yes, describe the nature (type, size), record location on an attached map, and photograph [Note: Check river-side of embankments along river, if safe to do so.]	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Is vegetation distressed or are bare areas evident? If Yes, describe the type of disorder (distressed, sparsely vegetated, bare), record approximate dimensions and indicate location(s) on an attached map.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Isolated/minor bare areas noted. See map for locations. With few exceptions, vegetation is filling in.

Quarterly Inspection Report

Inspected by: M. Harder

Date: 09-21-2021

Report No.: 2021-09

Areas Inspected: See Map

Questions	Response		Comments and Recommendations
Is there woody vegetation greater than 2 inches in diameter or 5 feet in height on the cover system(s)? If Yes, describe where and actions to be taken (refer to Section 4.2 of the O&M Plan).	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Map for locations. Staff were removing some trees during the inspection
Is any other damage evident? If Yes, describe the type of damage(s) and indicate the location(s) on an attached map.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Are obstruction(s) (brush, debris, timber, leaves, sediment) interfering with the proper functioning of ditches, gutters or flumes? If Yes, describe the type(s) of obstruction(s) and indicate the location(s) on an attached map.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Is sediment deposited in diversion berms, ditches gutters, flumes or culverts deeper than ¼ of the original channel depth (shown on the contract drawings) or culvert diameter? If Yes, record approximate dimensions and indicate locations on an attached map.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	

Quarterly Inspection Report

Inspected by: M. Harder

Date: 09-21-2021

Report No.: 2021-09

Areas Inspected: See Map

Questions	Response		Comments and Recommendations
2. Surface Water Drainage and Erosion Control System			
Is erosion evident? If Yes, describe the drainage structure inspected (ditch, gutter, flume, culvert, outfall, rip-rap), the type of erosion (rills, gullies, washouts, slope failure), record approximate dimensions (length, width, depth) and indicate location(s) on an attached map.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Minor erosion noted in a few isolated areas. Other previously noted areas have been repaired.
Is overall shape, configuration, and alignment of the drainageway as shown on the drawings? If No, describe the type of distortion (damaged, eroded, slope failure), record approximate dimensions and indicate location(s) on an attached map.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Is erosion evident at drainage outlet aprons? If Yes, record approximate dimensions and indicate location(s) on an attached map.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	

Inspection Checklist (check items that were inspected; document concerns noted;
refer to attached Drawings for specific areas)

Viscose Basins 1-3

<input checked="" type="checkbox"/> Vegetation	<input checked="" type="checkbox"/> Erosion	<input checked="" type="checkbox"/> Settlement	<input checked="" type="checkbox"/> Gas Vents
<input checked="" type="checkbox"/> Culvert inlets & outlets	<input checked="" type="checkbox"/> Rip-rap channels	<input checked="" type="checkbox"/> Access road near unit	<input type="checkbox"/>

Viscose Basins 4-6

<input checked="" type="checkbox"/> Vegetation	<input checked="" type="checkbox"/> Erosion	<input checked="" type="checkbox"/> Settlement	<input checked="" type="checkbox"/> Gas Vents
<input checked="" type="checkbox"/> Culvert inlets & outlets - N, E, & W of VB 4-6; - Pond W of VB 4-6	<input checked="" type="checkbox"/> Rip-rap channels	<input checked="" type="checkbox"/> Down chutes	<input checked="" type="checkbox"/> Gas vent filter & fence
<input checked="" type="checkbox"/> Former seep area - N of VB 4-6	<input checked="" type="checkbox"/> LS #1 & #2 and fencing	<input checked="" type="checkbox"/> Access road near unit	<input type="checkbox"/>

Viscose Basins 7-8

<input checked="" type="checkbox"/> Vegetation	<input checked="" type="checkbox"/> Erosion	<input checked="" type="checkbox"/> Settlement	<input checked="" type="checkbox"/> Gas Vents
<input checked="" type="checkbox"/> Culvert inlets & outlets (between VB-1 and VB-7)	<input checked="" type="checkbox"/> Rip-rap channels	<input checked="" type="checkbox"/> Down chutes	<input checked="" type="checkbox"/> Leachate collection manhole (MW VB7)
<input checked="" type="checkbox"/> Access road near unit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Viscose Basins 9-11

<input checked="" type="checkbox"/> Vegetation	<input checked="" type="checkbox"/> Erosion	<input checked="" type="checkbox"/> Settlement	<input checked="" type="checkbox"/> Gas Vents
<input checked="" type="checkbox"/> Drop inlets on VB-11	<input checked="" type="checkbox"/> Culvert inlets & outlets (S&W VB-11; N VB-11 & VB-9; and SW VB-10)	<input checked="" type="checkbox"/> Rip-rap channels	<input checked="" type="checkbox"/> Down chutes
<input checked="" type="checkbox"/> Access road near unit	<input checked="" type="checkbox"/> Seep area in pond north of VB-9	<input checked="" type="checkbox"/> VB 9-11 fence and gates	<input checked="" type="checkbox"/> LS #4 and fencing

New Landfill

<input checked="" type="checkbox"/> Vegetation	<input checked="" type="checkbox"/> Erosion	<input checked="" type="checkbox"/> Settlement	<input checked="" type="checkbox"/> Gas Vents
<input checked="" type="checkbox"/> Culvert inlets & outlets (NE & SE of NLF)	<input checked="" type="checkbox"/> Rip-rap channels	<input checked="" type="checkbox"/> Down chutes	<input checked="" type="checkbox"/> LS #3 and fencing
<input checked="" type="checkbox"/> Access road near unit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SB-1

<input checked="" type="checkbox"/> Vegetation	<input checked="" type="checkbox"/> Erosion	<input checked="" type="checkbox"/> Settlement	<input checked="" type="checkbox"/> Gas Vents
<input checked="" type="checkbox"/> Culvert inlets & outlets (NE SB-1; SB-2; SE SB-3; NE SB-4; & S SB-4)	<input checked="" type="checkbox"/> Rip-rap channels & outlets by River	<input checked="" type="checkbox"/> Down chutes (SB-1 & SB-4)	<input type="checkbox"/>
<input checked="" type="checkbox"/> Access road near unit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Inspection Checklist (check items that were inspected; document concerns noted;
refer to attached Drawings for specific areas)

SB-2

<input checked="" type="checkbox"/> Vegetation	<input checked="" type="checkbox"/> Erosion	<input checked="" type="checkbox"/> Settlement	<input checked="" type="checkbox"/> Culvert inlets & outlets (S & W Sides)
<input checked="" type="checkbox"/> Berms along River (site & river side)	<input checked="" type="checkbox"/> Rip-rap channels & outlets by River	<input checked="" type="checkbox"/> Access road near unit	<input type="checkbox"/>

SB-3

<input checked="" type="checkbox"/> Vegetation	<input checked="" type="checkbox"/> Erosion	<input checked="" type="checkbox"/> Settlement	<input checked="" type="checkbox"/> Gas Vents
<input checked="" type="checkbox"/> Culvert inlets & outlets (SE)	<input checked="" type="checkbox"/> Rip-rap channels & outlets by River	<input checked="" type="checkbox"/> Drop inlets (W side)	<input checked="" type="checkbox"/> Access road near unit
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SB-4

<input checked="" type="checkbox"/> Vegetation	<input checked="" type="checkbox"/> Erosion	<input checked="" type="checkbox"/> Settlement	<input checked="" type="checkbox"/> Gas Vents
<input checked="" type="checkbox"/> Culvert inlets & outlets (NE & S sides)	<input checked="" type="checkbox"/> Down chutes (S Side)	<input checked="" type="checkbox"/> Drop inlet (N side)	<input checked="" type="checkbox"/> Berms along River (site & river side)
<input checked="" type="checkbox"/> Access road near unit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SB-5

<input checked="" type="checkbox"/> Vegetation	<input checked="" type="checkbox"/> Erosion	<input checked="" type="checkbox"/> Settlement	<input checked="" type="checkbox"/> Gas Vents
<input checked="" type="checkbox"/> Berms along River and E side	<input checked="" type="checkbox"/> Access road near unit	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

FAB 1-3

<input checked="" type="checkbox"/> Vegetation	<input checked="" type="checkbox"/> Erosion	<input checked="" type="checkbox"/> Settlement	<input checked="" type="checkbox"/> Culvert inlets & outlets (E & S FAB1-2; SW FAB3)
<input checked="" type="checkbox"/> Access Road near unit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

FAS & FARA

<input checked="" type="checkbox"/> Vegetation	<input checked="" type="checkbox"/> Erosion	<input checked="" type="checkbox"/> Settlement	<input checked="" type="checkbox"/> Culvert inlets & outlets (E & N FAS; E FARA)
<input checked="" type="checkbox"/> Access Road near unit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

EL, PB 1-2, PB-3

<input checked="" type="checkbox"/> Vegetation	<input checked="" type="checkbox"/> Erosion	<input checked="" type="checkbox"/> Settlement	<input checked="" type="checkbox"/> Rip-rap Channels
<input checked="" type="checkbox"/> Culvert inlets & outlets (E & W EL; NW PB-1-2; S PB-3)	<input checked="" type="checkbox"/> Access road near unit	<input type="checkbox"/>	<input type="checkbox"/>

Quarterly Inspection Report Photographic Log
Avtex Superfund Site
Front Royal, Virginia



Photo Number: 1

Unit: OU-10

Basin/Landfill:

VB-4, 5, & 6

Date : 9/21/2021

Photo Description: Area of former standing water adjacent to LS-2 (dry).

Quarterly Inspection Report Photographic Log
Avtex Superfund Site
Front Royal, Virginia



Photo Number: 2

Unit: OU-10

Basin/Landfill:

VB-4, 5, & 6

Date : 9/21/2021

Photo Description: Area of former standing water adjacent to LS-2 (dry).

Quarterly Inspection Report Photographic Log
Avtex Superfund Site
Front Royal, Virginia



Photo Number: 3

Unit: OU-10

Basin/Landfill:

VB-2 & 3 / NFL

Date : 9/21/2021

Photo Description: Bare soil (~10' x30`) with rills southeast of VB-2&3 (Sediment basin between NFL and VB-2&3). Appears stable.

Quarterly Inspection Report Photographic Log
Avtex Superfund Site
Front Royal, Virginia



Photo Number: 4

Unit: OU-7

Basin/Landfill:

VB-9, 10, & 11

Date : 9/21/2021

Photo Description: Area around wells 103/203/303 – dry

Quarterly Inspection Report Photographic Log
Avtex Superfund Site
Front Royal, Virginia



Photo Number: 5

Unit: OU-7

Basin/Landfill:

VB-10

Date : 9/21/2021

Photo Description: Bare patches and exposed matting at down chute in south side of VB-10 - stable

Quarterly Inspection Report Photographic Log
Avtex Superfund Site
Front Royal, Virginia



Photo Number: 6

Unit: OU-7

Basin/Landfill:

VB-10

Date : 9/21/2021

Photo Description: Bare patches and exposed matting at down chute in south side of VB-10 - stable

Quarterly Inspection Report Photographic Log
Avtex Superfund Site
Front Royal, Virginia



Photo Number: 7

Unit: NTCRA Basins

Basin/Landfill:

SB-1

Date : 9/21/2021

Photo Description: Small trees in rip rap (less than one-inch diameter or five feet tall).

Quarterly Inspection Report Photographic Log
Avtex Superfund Site
Front Royal, Virginia



Photo Number: 8

Unit: NTCRA Basins

Basin/Landfill:

FAB-6

Date : 9/21/2021

Photo Description: Four or five small trees in ditch (less than two-inches diameter or five feet tall).

Quarterly Inspection Report Photographic Log
Avtex Superfund Site
Front Royal, Virginia



Photo Number: 9

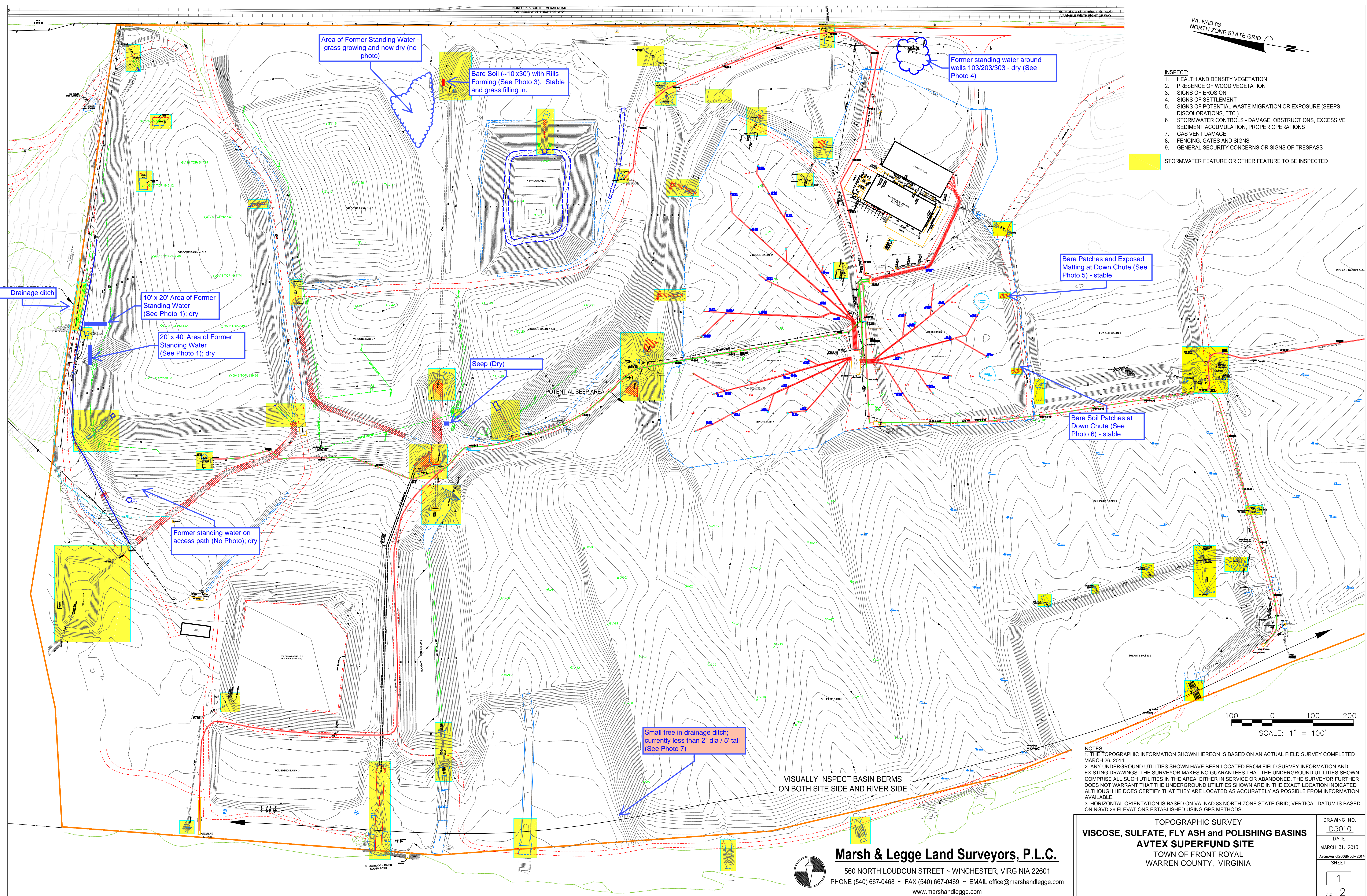
Unit: NTCRA Basins

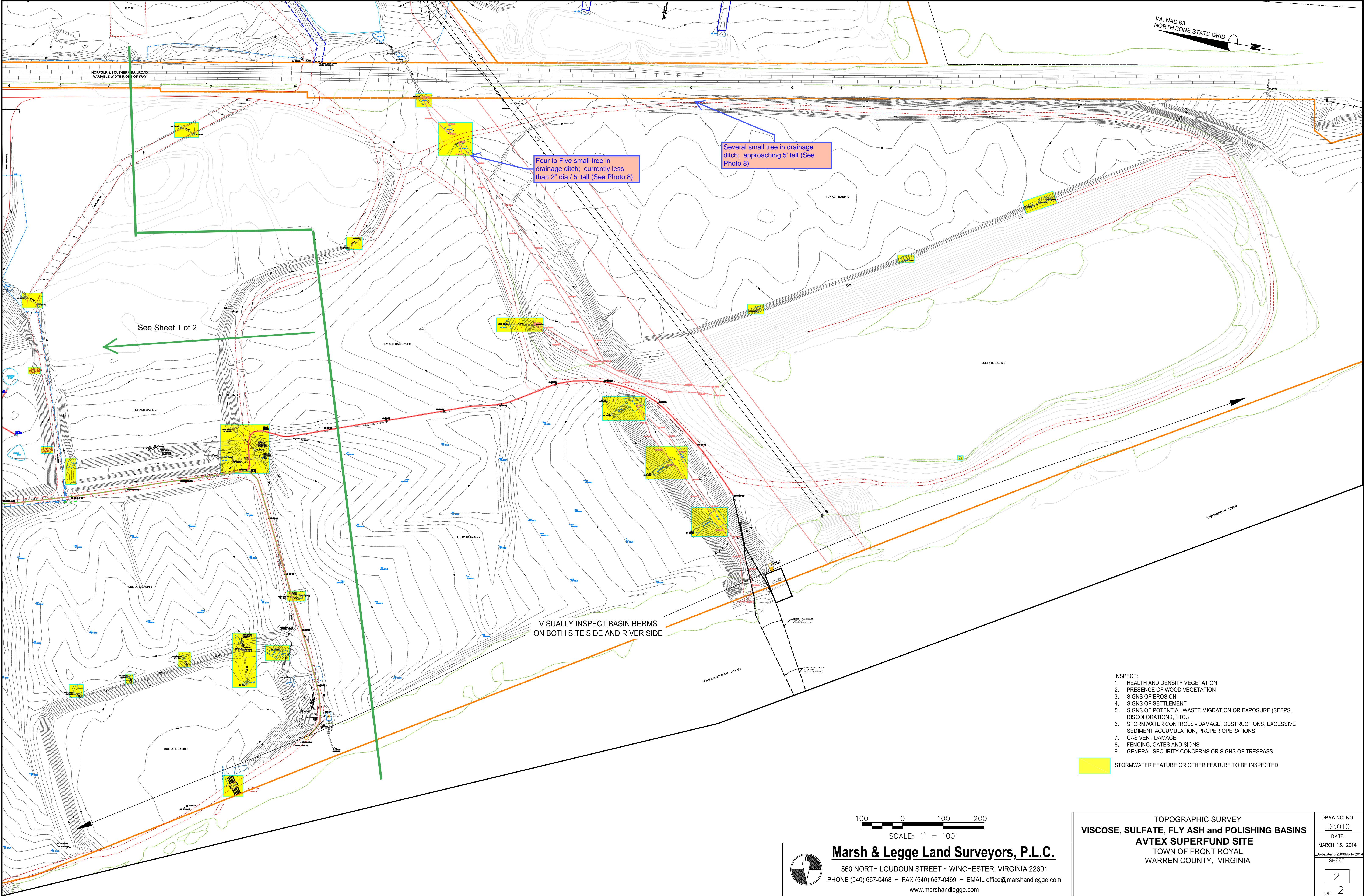
Basin/Landfill:

FAB-6

Date : 9/21/2021

Photo Description: Several small trees in ditch (approaching five feet tall).





VA NAD 83
NORTH ZONE STATE GRID

See Sheet 1 of 2

Four to Five small tree in
drainage ditch; currently less
than 2" dia / 5' tall (See Photo 8)

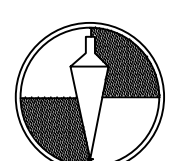
Several small tree in drainage
ditch; approaching 5' tall (See
Photo 8)

VISUALLY INSPECT BASIN BERMS
ON BOTH SITE SIDE AND RIVER SIDE

- INSPECT:
1. HEALTH AND DENSITY VEGETATION
 2. PRESENCE OF WOOD VEGETATION
 3. SIGNS OF EROSION
 4. SIGNS OF SETTLEMENT
 5. SIGNS OF POTENTIAL WASTE MIGRATION OR EXPOSURE (SEEPS, DISCOLORATIONS, ETC.)
 6. STORMWATER CONTROLS - DAMAGE, OBSTRUCTIONS, EXCESSIVE SEDIMENT ACCUMULATION, PROPER OPERATIONS
 7. GAS VENT DAMAGE
 8. FENCING, GATES AND SIGNS
 9. GENERAL SECURITY CONCERNS OR SIGNS OF TRESPASS

STORMWATER FEATURE OR OTHER FEATURE TO BE INSPECTED

100 0 100 200
SCALE: 1" = 100'



Marsh & Legge Land Surveyors, P.L.C.
560 NORTH LOUDOUN STREET ~ WINCHESTER, VIRGINIA 22601
PHONE (540) 667-0468 ~ FAX (540) 667-0469 ~ EMAIL office@marshandlegge.com
www.marshandlegge.com

TOPOGRAPHIC SURVEY
VISCOSE, SULFATE, FLY ASH and POLISHING BASINS
AVTEX SUPERFUND SITE
TOWN OF FRONT ROYAL
WARREN COUNTY, VIRGINIA

DRAWING NO.
ID5010
DATE:
MARCH 13, 2014
Avtex/Heris2008Mod-2014
SHEET
2
OF **2**

ATTACHMENT 3

OU-7 AND SITE PERIMETER AIR MONITORING RESULTS

Air Monitoring Form
Avtex Superfund Site
Front Royal, Virginia

Date 9/20/2021
Technician M. Harder / M. Robinson

Air Samples Collected?

☐ Yes
☒ No

Gas Monitoring Devices	Used (Y/N)	Calibrated (Y/N)	Date Calibrated	Initials
Jerome613X (low-level H ₂ S)	Y	Y	3/2/2021	MH
MiniRae 3000 (PID)	Y	Y	9/20/2021	MH
MultiRae (PID, O ₂ , CO, H ₂ S, LEL)	N	N		
Landtec GEM 5000	N	N		

Weather Conditions:

Precipitation (Current): ☐ Rain ☐ Snow ☐ Sleet ☐ Mix ☐ Other ☒ None
☐ Light ☐ Moderate ☐ Heavy

Current Temperature: 75 °F

Wind Direction (blowing from): SE (N, NE, SW, variable, etc.)

Wind Speed: 5 mph

Barometric Pressure: 30.22 inches

Cloud Cover: ☐ Clear ☐ Partly Cloudy ☐ Mostly Cloudy ☒ Cloudy/Overcast ☐ Foggy

Monitoring Location	Time	H ₂ S (ppm)	Organic / VOC (ppm)	CS ₂ (ppm)	Methane (%LEL)	Comments
OU-7 Perimeter - (H ₂ S Indicator Value = 0.006 ppm)						
N	1703	0.000	0.0	--	--	Slight H ₂ S Odor
NE	1700	0.000	0.0	--	--	
SE	1656	0.000	0.0	--	--	
S	1712	0.000	0.0	--	--	
SW	1709	0.000	0.0	--	--	
NW	1704	0.000	0.0	--	--	Slight H ₂ S Odor
Site Perimeter - (H ₂ S Indicator Value = 0.0014 ppm)						
N	1651	0.000	0.0	--	--	
NE	1620	0.000	0.0	--	--	
E	1627	0.000	0.0	--	--	
SE	1630	0.000	0.0	--	--	
S	1634	0.000	0.0	--	--	
SW	1637	0.000	0.0	--	--	
W	1641	0.000	0.0	--	--	
NW	1645	0.000	0.0	--	--	
Downwind (location: <u>NW</u>)	1648	0.000	0.0	--	--	

Activities Occurring on-site that might relate to air emissions:

Groundwater extraction and treatment.

If monitoring results are greater than one or more of above levels & sustained for 1 minute or longer, take following actions:

1. Notify FMC Site Manager, SSO, and EPA/EPA oversight representative;
2. Stop on-site intrusive operations and assess source(s);
3. Step-up work-zone & perimeter monitoring;
4. Perform monitoring the next day to verify levels.

If H₂S > 0.1 ppm sustained for 5 minutes at Site Perimeter - Notify Warren County/Front Royal LEPC and Health Department.

FIGURE 1
AIR MONITORING LOCATIONS
DURING OU-7 WORK
AVTEX FIBERS SUPERFUND SITE
FRONT ROYAL, VIRGINIA



LEGEND

- PROPERTY BOUNDARY
- ▲ SITE PERIMETER LOCATION
- ▲ OU-7 PERIMETER LOCATION

NOTE: DOWNWIND LOCATION TO BE DETERMINED BASED ON FIELD CONDITIONS.

500 250 0 500
SCALE IN FEET

ATTACHMENT 4

GLTP DISCHARGE MONITORING AND INFORMATION

Table 4.1 Monthly Flow Totals - Third Quarter 2021

Avtex Fibers Superfund Site

Lift Stations, Test Wells and Viscose Basin

July 2021											
Lift Stations Flow Report			Test Wells Flow Report					Viscose Basin Flow Report			
Date	Total LS Flow (MGD)		Date	TW1 Flow (MGD)	TW2 Flow (MGD)	TW3 Flow (MGD)		Date	VB9 Flow (MGD)	VB10 Flow (MGD)	VB 11 Flow (MGD)
7/1/2021	0.006		7/1/2021	0.058	0.001	0.000		7/1/2021	0.000	0.000	0.041
7/2/2021	0.006		7/2/2021	0.065	0.001	0.000		7/2/2021	0.000	0.000	0.041
7/3/2021	0.005		7/3/2021	0.058	0.001	0.000		7/3/2021	0.000	0.000	0.041
7/4/2021	0.001		7/4/2021	0.065	0.000	0.000		7/4/2021	0.000	0.000	0.041
7/5/2021	0.000		7/5/2021	0.065	0.000	0.000		7/5/2021	0.000	0.000	0.041
7/6/2021	0.000		7/6/2021	0.065	0.000	0.000		7/6/2021	0.000	0.000	0.041
7/7/2021	0.000		7/7/2021	0.065	0.000	0.000		7/7/2021	0.000	0.000	0.041
7/8/2021	0.000		7/8/2021	0.065	0.001	0.000		7/8/2021	0.000	0.000	0.041
7/9/2021	0.000		7/9/2021	0.065	0.001	0.000		7/9/2021	0.000	0.000	0.041
7/10/2021	0.000		7/10/2021	0.058	0.001	0.000		7/10/2021	0.000	0.000	0.041
7/11/2021	0.000		7/11/2021	0.065	0.001	0.000		7/11/2021	0.000	0.000	0.041
7/12/2021	0.000		7/12/2021	0.065	0.001	0.000		7/12/2021	0.000	0.000	0.041
7/13/2021	0.000		7/13/2021	0.065	0.001	0.000		7/13/2021	0.000	0.000	0.042
7/14/2021	0.000		7/14/2021	0.065	0.001	0.000		7/14/2021	0.000	0.000	0.042
7/15/2021	0.000		7/15/2021	0.065	0.001	0.000		7/15/2021	0.000	0.000	0.042
7/16/2021	0.000		7/16/2021	0.065	0.001	0.000		7/16/2021	0.000	0.000	0.042
7/17/2021	0.000		7/17/2021	0.065	0.001	0.000		7/17/2021	0.000	0.000	0.042
7/18/2021	0.000		7/18/2021	0.065	0.001	0.000		7/18/2021	0.000	0.000	0.043
7/19/2021	0.000		7/19/2021	0.065	0.001	0.000		7/19/2021	0.000	0.000	0.043
7/20/2021	0.000		7/20/2021	0.065	0.001	0.000		7/20/2021	0.000	0.000	0.043
7/21/2021	0.000		7/21/2021	0.065	0.001	0.000		7/21/2021	0.000	0.000	0.043
7/22/2021	0.000		7/22/2021	0.065	0.001	0.000		7/22/2021	0.000	0.000	0.043
7/23/2021	0.000		7/23/2021	0.065	0.001	0.000		7/23/2021	0.000	0.000	0.043
7/24/2021	0.000		7/24/2021	0.065	0.001	0.000		7/24/2021	0.000	0.000	0.044
7/25/2021	0.001		7/25/2021	0.065	0.005	0.000		7/25/2021	0.000	0.000	0.044
7/26/2021	0.004		7/26/2021	0.044	0.018	0.000		7/26/2021	0.000	0.000	0.044
7/27/2021	0.004		7/27/2021	0.058	0.021	0.000		7/27/2021	0.000	0.000	0.044
7/28/2021	0.004		7/28/2021	0.066	0.010	0.000		7/28/2021	0.000	0.000	0.044
7/29/2021	0.004		7/29/2021	0.066	0.010	0.014		7/29/2021	0.000	0.000	0.044
7/30/2021	0.004		7/30/2021	0.024	0.012	0.018		7/30/2021	0.000	0.000	0.044
7/31/2021	0.004		7/31/2021	0.058	0.011	0.017		7/31/2021	0.000	0.000	0.044

Table 4.1 Monthly Flow Totals - Third Quarter 2021

Avtex Fibers Superfund Site

Lift Stations, Test Wells and Viscose Basin

August 2021											
Lift Stations Flow Report			Test Wells Flow Report					Viscose Basin Flow Report			
Date	Total LS Flow (MGD)		Date	TW1 Flow (MGD)	TW2 Flow (MGD)	TW3 Flow (MGD)		Date	VB9 Flow (MGD)	VB10 Flow (MGD)	VB 11 Flow (MGD)
8/1/2021	0.004		8/1/2021	0.065	0.001	0.000		8/1/2021	0.000	0.000	0.045
8/2/2021	0.004		8/2/2021	0.065	0.001	0.000		8/2/2021	0.000	0.000	0.045
8/3/2021	0.004		8/3/2021	0.065	0.001	0.000		8/3/2021	0.000	0.000	0.045
8/4/2021	0.004		8/4/2021	0.065	0.001	0.000		8/4/2021	0.000	0.000	0.045
8/5/2021	0.004		8/5/2021	0.065	0.001	0.000		8/5/2021	0.000	0.000	0.045
8/6/2021	0.004		8/6/2021	0.065	0.001	0.000		8/6/2021	0.000	0.000	0.045
8/7/2021	0.004		8/7/2021	0.065	0.001	0.000		8/7/2021	0.000	0.000	0.045
8/8/2021	0.000		8/8/2021	0.000	0.000	0.000		8/8/2021	0.000	0.000	0.000
8/9/2021	0.004		8/9/2021	0.058	0.001	0.000		8/9/2021	0.000	0.000	0.045
8/10/2021	0.004		8/10/2021	0.065	0.001	0.000		8/10/2021	0.000	0.000	0.045
8/11/2021	0.004		8/11/2021	0.065	0.001	0.000		8/11/2021	0.000	0.000	0.046
8/12/2021	0.003		8/12/2021	0.065	0.001	0.000		8/12/2021	0.000	0.000	0.046
8/13/2021	0.003		8/13/2021	0.065	0.001	0.000		8/13/2021	0.000	0.000	0.046
8/14/2021	0.001		8/14/2021	0.065	0.001	0.000		8/14/2021	0.000	0.000	0.047
8/15/2021	0.000		8/15/2021	0.065	0.001	0.000		8/15/2021	0.000	0.000	0.047
8/16/2021	0.000		8/16/2021	0.065	0.001	0.000		8/16/2021	0.000	0.000	0.047
8/17/2021	0.000		8/17/2021	0.065	0.001	0.000		8/17/2021	0.000	0.000	0.048
8/18/2021	0.000		8/18/2021	0.011	0.008	0.010		8/18/2021	0.000	0.000	0.048
8/19/2021	0.001		8/19/2021	0.000	0.018	0.026		8/19/2021	0.000	0.000	0.048
8/20/2021	0.003		8/20/2021	0.000	0.021	0.029		8/20/2021	0.000	0.000	0.049
8/21/2021	0.003		8/21/2021	0.000	0.021	0.029		8/21/2021	0.000	0.000	0.049
8/22/2021	0.003		8/22/2021	0.000	0.021	0.029		8/22/2021	0.000	0.000	0.049
8/23/2021	0.003		8/23/2021	0.000	0.021	0.029		8/23/2021	0.000	0.000	0.049
8/24/2021	0.003		8/24/2021	0.000	0.021	0.029		8/24/2021	0.000	0.000	0.050
8/25/2021	0.003		8/25/2021	0.000	0.021	0.029		8/25/2021	0.000	0.000	0.050
8/26/2021	0.003		8/26/2021	0.002	0.021	0.029		8/26/2021	0.000	0.000	0.050
8/27/2021	0.003		8/27/2021	0.030	0.021	0.029		8/27/2021	0.000	0.000	0.051
8/28/2021	0.001		8/28/2021	0.043	0.009	0.012		8/28/2021	0.000	0.000	0.051
8/29/2021	0.000		8/29/2021	0.059	0.001	0.000		8/29/2021	0.000	0.000	0.051
8/30/2021	0.016		8/30/2021	0.066	0.008	0.000		8/30/2021	0.000	0.000	0.052
8/31/2021	0.016		8/31/2021	0.016	0.013	0.000		8/31/2021	0.000	0.000	0.052

Table 4.1 Monthly Flow Totals - Third Quarter 2021

Avtex Fibers Superfund Site

Lift Stations, Test Wells and Viscose Basin

September 2021											
Lift Stations Flow Report			Test Wells Flow Report					Viscose Basin Flow Report			
Date	Total LS Flow (MGD)		Date	TW1 Flow (MGD)	TW2 Flow (MGD)	TW3 Flow (MGD)		Date	VB9 Flow (MGD)	VB10 Flow (MGD)	VB 11 Flow (MGD)
9/1/2021	0.030		9/1/2021	0.001	0.019	0.000		9/1/2021	0.000	0.000	0.053
9/2/2021	0.030		9/2/2021	0.024	0.021	0.000		9/2/2021	0.000	0.000	0.053
9/3/2021	0.021		9/3/2021	0.058	0.011	0.000		9/3/2021	0.000	0.000	0.053
9/4/2021	0.009		9/4/2021	0.066	0.000	0.000		9/4/2021	0.000	0.000	0.053
9/5/2021	0.007		9/5/2021	0.065	0.003	0.000		9/5/2021	0.000	0.000	0.053
9/6/2021	0.006		9/6/2021	0.052	0.018	0.000		9/6/2021	0.000	0.000	0.053
9/7/2021	0.006		9/7/2021	0.000	0.021	0.000		9/7/2021	0.000	0.000	0.054
9/8/2021	0.007		9/8/2021	0.044	0.021	0.000		9/8/2021	0.000	0.000	0.054
9/9/2021	0.031		9/9/2021	0.051	0.021	0.000		9/9/2021	0.000	0.000	0.054
9/10/2021	0.031		9/10/2021	0.024	0.014	0.000		9/10/2021	0.000	0.000	0.054
9/11/2021	0.013		9/11/2021	0.059	0.011	0.000		9/11/2021	0.000	0.000	0.055
9/12/2021	0.008		9/12/2021	0.066	0.000	0.000		9/12/2021	0.000	0.000	0.055
9/13/2021	0.007		9/13/2021	0.066	0.000	0.000		9/13/2021	0.000	0.000	0.055
9/14/2021	0.006		9/14/2021	0.037	0.014	0.000		9/14/2021	0.000	0.000	0.055
9/15/2021	0.004		9/15/2021	0.057	0.016	0.000		9/15/2021	0.000	0.000	0.056
9/16/2021	0.003		9/16/2021	0.065	0.010	0.000		9/16/2021	0.000	0.000	0.056
9/17/2021	0.003		9/17/2021	0.065	0.000	0.000		9/17/2021	0.000	0.000	0.056
9/18/2021	0.003		9/18/2021	0.058	0.000	0.000		9/18/2021	0.000	0.000	0.056
9/19/2021	0.003		9/19/2021	0.065	0.000	0.000		9/19/2021	0.000	0.000	0.056
9/20/2021	0.003		9/20/2021	0.065	0.000	0.000		9/20/2021	0.000	0.000	0.056
9/21/2021	0.003		9/21/2021	0.065	0.000	0.000		9/21/2021	0.000	0.000	0.056
9/22/2021	0.003		9/22/2021	0.065	0.000	0.000		9/22/2021	0.000	0.000	0.056
9/23/2021	0.003		9/23/2021	0.032	0.000	0.000		9/23/2021	0.000	0.000	0.056
9/24/2021	0.004		9/24/2021	0.058	0.000	0.000		9/24/2021	0.000	0.000	0.056
9/25/2021	0.004		9/25/2021	0.065	0.000	0.000		9/25/2021	0.000	0.000	0.056
9/26/2021	0.004		9/26/2021	0.065	0.000	0.000		9/26/2021	0.000	0.000	0.056
9/27/2021	0.004		9/27/2021	0.065	0.000	0.000		9/27/2021	0.000	0.000	0.057
9/28/2021	0.004		9/28/2021	0.065	0.000	0.000		9/28/2021	0.000	0.000	0.057
9/29/2021	0.004		9/29/2021	0.065	0.008	0.000		9/29/2021	0.000	0.000	0.057
9/30/2021	0.004		9/30/2021	0.019	0.018	0.020		9/30/2021	0.000	0.000	0.057

Table 4.2 Monthly Flow Totals - Third Quarter 2021
Avtex Fibers Superfund Site
Site Rainfall Data - January 1 - September 30, 2021

Month	Average Rainfall for Winchester, VA (in)*	Average Site Rainfall 1990-2013 (in)	2006 Actual Rainfall (in)	2007 Actual Rainfall (in)	2008 Actual Rainfall (in)	2009 Actual Rainfall (in)	2010 Actual Rainfall (in)	2011 Actual Rainfall (in)	2012 Actual Rainfall (in)	2013 Actual Rainfall (in)	2014 Actual Rainfall (in)	2015 Actual Rainfall (in)	2016 Actual Rainfall (in)	2017 Actual Rainfall (in)	2018 Actual Rainfall (in)	2019 Actual Rainfall (in)	2020 Actual Rainfall (in)	2021 Actual Rainfall (in)	Percent of Average Site Rainfall (%)
January	2.4	2.7	2.0	1.2	1.0	1.4	3.35	0.9	2.0	3.8	1.1	1.4	1.2	2.5	1.8	3.9	3.1	1.0	36%
February	2.5	2.3	1.7	1.9	2.3	0.0	4.35	1.4	2.3	0.9	3.2	0.7	2.2	0.8	2.0	3.4	1.8	2.2	96%
March	3.1	3.6	0.1	3.7	2.9	1.5	5.7	4.6	1.9	3.9	2.3	1.7	1.0	2.4	0.8	4.6	1.6	1.4	39%
April	3.1	3.2	2.8	3.4	6.2	3.2	1.59	6.5	2.5	1.3	1.5	2.9	1.3	1.7	2.4	2.8	3.7	2.6	82%
May	3.7	3.8	1.0	1.9	5.2	5.8	3.25	5.6	3.6	2.4	7.2	1.6	3.9	7.0	7.7	5.1	2.9	3.0	79%
June	3.9	4.4	9.7	3.5	4.3	4.6	0.6	4.0	3.6	5.2	1.5	3.9	3.8	1.3	9.9	1.6	5.1	1.8	41%
July	3.9	3.4	2.2	1.7	3.8	3.0	1.8	3.1	4.3	1.9	4.6	1.8	5.4	6.7	6.1	2.7	2.6	0.27	8%
August	3.5	3.1	1.3	2.8	3.5	2.1	3.3	3.4	5.2	2.6	3.7	1.0	2.3	2.1	4.1	4.8	5.0	0.59	19%
September	3.1	4.7	6.1	2.0	4.3	1.3	5.7	5.5	4.9	2.5	1.6	3.6	6.1	1.3	5.9	0.3	5.5	0.86	18%
October	3.2	3.0	4.3	4.1	1.2	2.7	0.65	3.9	4.3	5.1	5.17	1.65	0.6	3.5	1.3	2.0	0.8		
November	3.1	2.9	5.2	1.6	2.5	3.7	1.8	3.0	1.1	1.6	1.83	1.36	0.8	0.9	4.7	0.6	1.8		
December	2.5	2.6	0.7	2.8	1.4	5.0	2.0	3.6	1.55	1.5	3.02	2.46	1.5	0.4	3.7	0.3	2.3		
Totals to	37.9	39.6	36.9	30.4	38.5	34.2	34.1	45.2	37.0	32.8	36.7	24.1	30.0	30.4	50.3	32.1	36.1	13.7	35%

* Source: National Climate Data Center TD 9641 Clim 81